

KHRCIAN, A.KH.

PA 50170

USSR/Aerological
Humidity - Measurements

Mar 1947

Distribution of Specific Humidity in the Free Atmosphere," A. N. Khrgian, Cent Aerological Observatory, Moscow, 3 pp

"Izv Akad Nauk SSSR, Ser Geograf i Geofiz" Vol XI,
No 2

Gives table of mean values of atmosphere's specific humidity above Moscow at heights up to 4 km for different months. Calculations carried out on basis of 1,970 airplane ascents. Interpolation formula given for dependence of specific humidity on height, and some deductions made on connection

SOTD

USSR/Meteorology (Contd)

Mar 1947

between this element and processes of turbulence, evaporation, and condensation. Submitted by Academician L. S. Lyubensky.

SOTD

"APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R000722320014-0

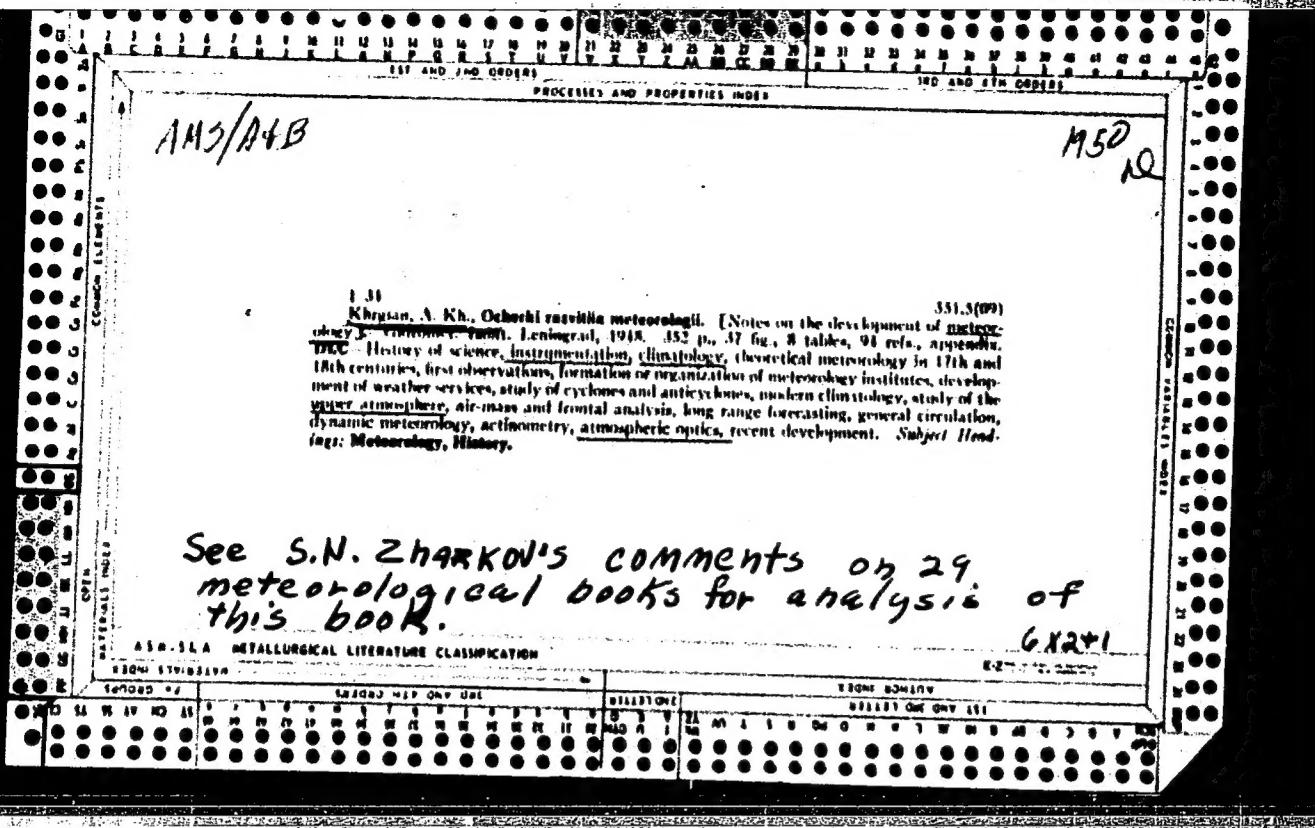
KHRCIAN, A. KH.

Breezes of Lake Ladoga. Doklady GOIN (Reports of the GOIN) No 102, 1947.

SO: U-3039, 11 Mar 1953

APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R000722320014-0"



KHRGIAN, A. KH.

PA 167T98

**USSR/Meteorology - Upper Air
Literature**

Jan/Feb 48

"Book Reviews," A. Kh. Khrgian

"Meteorol i Gidrol" No 1, pp 123-127

Khrgian reviews three foreign books: Ehmert's "Tropospheric Ozone," P. Gotz's "Contemporary Status of Ozone Problems," and Ekhart's "Study of Wind Conditions in the Upper Stratosphere."

167T98

KHRGIAN, A. Kh.

"The Distribution of Humidity over Moscow," Trudy of the Aerological Observatory, No. 1, 1948. Listed as a reference in a Symposium of 16 articles in Meteorol. i Gidrol., No. 1, September, 1950.

KHROIAN, A. KH.

35203. Polet 27 oktyabrya 1948 g. i issledovanie protsessov, proikhodyashchikh
v kapel'nykh oblakakh. Trudy tsentr. Aerol. Observatorii, Vyp. 5, 1949, s. 13-27.

SO: Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949

KHRCIAN, A. KH.

35202. Ob Issledovanii Strukturny Oblakov Opticheskim Metodom. Trudy Tsentr. Aerol. Observatorii, Vyp. 5, 1949, s. 28-37--Bibliogr: 9 Nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949

SPASSKIY, M.F.; STRAKHOV, P.I. Khrgian, A. Kh., professor, redaktor;
GRIGOROVA, V.A. redaktor; AKHLLAMOV, S.N., tekhnicheskij
redaktor

[Selected works on the physics of the atmosphere] Izbrannye
raboty po fizike atmosfery. Redaktsiia i primechaniia A. Kh.
Khrgiana. Moskva, Gos.izd-vo tekhniko-teoreticheskoi lit-ry,
1951. 342 p.
(Atmosphere) (MLRA 8:10)

KHREGIAN, A.Kh.

Atmospheric processes differing little from adiabatic processes.
Trudy TSAO no. 6:184-186 '52. (MIRA 11:6)
(Atmosphere)

Kings, N. 4 Kh

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Molecular mechanisms of protein synthesis in the *Escherichia coli* cell 173

and the formula for calculating q is presented. With the aid of this method, the effect of the water droplet content and droplet radii of the lower cloud strata on the droplet radius of the upper cloud strata is determined. Water droplets in the upper cloud strata are assumed to be spherical.

137 *Journal* 145

17

EE

112

Translation M-1156, 11 del 56

KHRGIAN, A. Kh.

Wainwright B-3, 077, 303

11/11

KHRGIAN, A. KH. Prof

PA 245T87

USSR/Meteorology - Air Waves Nov 52

"Formation of Atmospheric Waves on the Lee Side of Mountain Ranges," Prof A. Kh. Khrgian, Dr of Geog Sci, Dolgoprudnaya Sta, Central Aerological Observatory

"Meteorol i Gidrol" No 11, pp 37-40

When an air current encounters a mountain range orientated approximately perpendicular to it, atmospheric waves are formed on the lee side of the range parallel to it.

245T87

KHRGIAN A. Kh.

"A Study of Cloud Structure by the Optical Method," and "A Flight on 27 October 1948
to Study Processes in Clouds Containing Raindrops," p. 55, Sum. 51, 14 Jan 52
(with A. M. BOROVIKOV)

Aerosfera zemli. Sbornik. [Earth's atmosphere. Symposium.] Moscow, Gosud. Izdat. Kul'turno-Prosvetitel'nai Literatury, 1933. 422 p. fig., tables, chart, illus. Price: 13 r. 70 k. DLC—This is a fascinating and challenging book for popular use (30,000 copies were printed), consisting of 14 articles by different authorities, arranged under 5 major headings: 1) atmosphere and sun, 2) weather and climate, 3) work of the wind, 4) air and life and 5) wealth of the earth's atmosphere. An article by B. L. Dzerzevskii on atmospheric structure is an accurate and quite technical treatise on every aspect of the troposphere, stratosphere and ionosphere and processes going on in these regions. The second article by the late Prof. N. N. Kalitin discusses the physical and physiological aspects of solar radiation in all latitudes and under varying weather conditions. Ch. 3, by A. K. Kurgan, deals with optical phenomena in the atmosphere (halos, mirage, visibility, rainbows, etc.). The section on weather and climate, contains articles by A. P. Gal'tsov on weather, weather analysis and weather forecasting; by V. Iu. Vize on the Arctic and Africa; by L. A. Chetnikov on weather and climate and by S. A. Sapozhnikova on microclimatology, climate over towns, forests, lakes; snow microclimate, soil and slope microclimate, dust storms and their prevention, and human climatology. The section on work of the wind has an article by B. A. Fenorovitch on action of wind on soil and the earth, one by N. A. Belinskii on wind, waves and inundations, one by A. V. Karmishin on the use of wind power, showing many conventional and several recent models of the wind generators for use in the Arctic. The section on air and life contains articles by N. S. Sushchenkovskii on the relation of the atmosphere to plants, birds, fish, animals and insects; one by G. N. Kassil' on man and air, atmospheric pollution, etc. and one by M. I. Gol'din on microbes and air in Arctic, at sea, in upper air and in rooms, etc.; and the final section on wealth of the air by D. Iu. Gamburg, goes into the composition of the atmosphere, the rare gases, CO₂ and nitrogen cycles, air conditioning, etc. Although designed for high school students, every chapter is written by an outstanding specialist in a particular field of meteorology, and contains an amazing amount of technical information not usually found in such elementary texts, as well as a host of clever schematic diagrams and beautifully colored photographs or charts. No literature citations are given, though there is a great deal of historical material to be found in the Russian contributions in each field. An English edition of this book would be most welcome. Subject Headings: 1. Elementary meteorology 2. Russian science 3. Collected works 4. Textbooks. I. Dzerzevskii, B. L. II. Kalitin, N. N. III. Kurgan, Kh.

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KHRGIAN, A.Kh.

PHASE I

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 405 - I

BOOK

Author: KHRGIAN, A. KH.

Call No.: AF628311

Full Title: PHYSICS OF THE ATMOSPHERE

Transliterated Title: Fizika atmosfery

Publishing Data

Originating Agency: None

Publishing House: State Publishing House of Technical and
Theoretical Literature

Date: 1953

No. pp.: 456

No. of copies: 5,000

Editorial Staff

Editor: None

Tech. Ed.: None

Editor-in-Chief: None

Appraiser: None

Text Data

Coverage: The book is an advanced text in meteorology, based on mathematical physics and vector analysis. It includes 158 formulae; 219 graphs, charts, photos and diagrams; and 119 tables. It is based on observations made mainly on the territory of the U.S.S.R. A large number of Russian scientists, their work, their laboratory experiments and the results attained (in whirlwind, cloud formation, precipitation, etc.) are cited in the text. The book was compared with the Compendium of Meteorology of the American Meteorological Society (1951), the Handbook of Meteorology by Berry, Bollay and

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Beers (1945), several leading American texts, and the Russian text Kurs Meteorologii edited by Tverskoy (1951) (see our Treasure Island Bibliographical Report, AID 20 - II). The table of contents covers the subject matter well. Atmospheric optics and acoustics are not mentioned. Items which could not be found in available American texts, or which have a different explanation, or new and different formulae are marked by asterisks (*) in the table of contents.

The text may be considered as a theoretical advanced course, or a supplement to, or a mathematical development, of Prof. Tverskoy's Kurs Meteorologii. In its descriptive part and in its accumulated data, as well as in its clear and well written definitions, it resembles the latter. But in the application of mathematical physics it goes further, and a thorough knowledge of higher mathematics is a prerequisite. There is scarcely any descriptions of instruments and little on methods of observations. Numerous references are cited in the footnotes, very few of them to non Russian sources, and at the end of the text nine books are mentioned, all Russian, on which the author has based his work. The first of these books is the above mentioned course edited by Prof. Tverskoy. The system of symbols and formulae describing known physical

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phenomena used in this work differs from those employed in the comparable English, American and Russian texts, especially that of Tverskoy. Except for this, nothing new was found.

TABLE OF CONTENTS

Introduction

Ch. I Composition of the Atmosphere

Fundamental data. Theory of separation of gases. Oxygen. Helium and other inert gases. Carbon dioxide. Sodium in the atmosphere. Composition data of the upper atmospheric layers from spectra of aurorae boreales. Hydrogen and hydroxyl in the atmosphere. Escape of gases from the atmosphere. Gaseous tail of the Earth * (pp. 31-32).

Ch. II Ozone

The role of ozone in atmospheric processes. Its distribution in the atmosphere. The physical processes governing this distribution. Horizontal advection.

Ch. III Atmospheric Dust

General. Falling of dust particles. Air turbulence and its importance in dust distribution. Theoretical considerations on dust distribution. Dust and sand transportation. Sand drifts.

Ch. IV Water Vapor

Units. Distribution of humidity: vertically and in the ground layer.

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16-32

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68-87

Ch. V Basic Laws of Atmospheric Statics. Air Pressure
Equation of state of the air. Dependence of pressure on altitude above sea level. Some examples of the use of the barometric formula. Barometric formula of the geopotential. Barometric formula for great heights (100-1000 km). Air pressure at sea level. Diurnal variation of pressure.

Ch. VI Adiabatic Processes in the Atmosphere 88-102

Dry adiabatic process. Entropy. Wet adiabatic process. Adiabatic (thermodynamic) diagrams. The level of condensation. Foehn (chinook). Thermodynamic stability in the atmosphere. The reserve of energy of instability. Processes differing little from the adiabatic. Determining instability by the layer method.

Ch. VII Radiation Processes in the Atmosphere. Solar Radiation 103-131

Radiation laws. Distribution of solar heat on the surface of the earth assuming the absence of atmosphere. Secular variations of climates. Absorption and dispersion of solar rays in the atmosphere. Length of path of a ray from the sun in the atmosphere. Solar radiation reaching the earth's surface. Scattering of solar radiation. Albedo of the earth's surface.

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Fizika atmosfery

AID 405 - I

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Ch. VIII Radiation from the Earth's Surface and
the Atmosphere

132-142

Nature of terrestrial surface radiation. Absorption and emission of long-wave radiation in the atmosphere * (pp. 134-136 with 2 tables). Results of observations of radiation. Total effective radiation. Radiation under various angles with the horizon. Radiative balance.

Ch. IX Heat Interchange in the Upper Layers of the
Soil and Water

143-162

Principles of the theory of the spread of heat in the soil. Annual and daily temperature variation in the soil in natural conditions. Snow cover and the soil temperature. Possible artificial method of changing soil temperatures * (pp. 153-157 with 2 tables). Permafrost * (pp. 157-160 with a chart and graph). Heat interchange in the surface layers of the sea.

Ch. X Distribution of Temperatures in the Lower
Atmospheric Layers

163-188

Some theoretical considerations of distribution of heat emanating from the sun. Heat carried by maritime currents. Heat interchange in the atmosphere between land and sea. General air temperature distribution on the globe. Temperature in mountain country and its dependence on the relief.

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Fizika atmosfery

AID 405 - I
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Annual variation of temperature. Non-periodical temperature variations. Effect of plant growth on air temperatures. Frost.

Ch. XI Radiant and Heat Balance in the Atmosphere and Temperature as a Function of Altitude

189-208

Methods of theoretical study of radiant balance. Diurnal variation of temperature. Temperature distribution in free atmosphere. Inversion.

Ch. XII Temperature in Upper Atmospheric Layers

209-220

Concept of the temperature of rarified gas. Sonic method of determining temperatures. Determining high altitude temperatures by observation of meteors. Optical methods. Observation by rockets. Ionosphere observations. Conclusions. Stratification of the upper atmospheric layers.

Ch. XIII Evaporation

221-234

Molecular-kinetic evaporation theory. Diffusion process of water vapor. Evaporation 1) from a limited area, 2) from a water surface under natural conditions, 3) from the soil. Evaporation and diurnal variation of air humidity. Effect of irrigated areas on air humidity* (p. 234 with 2 tables).

Ch. XIV Condensation and sublimation of water vapor in the Atmosphere

235-247

Pressure of saturated water vapor. Cooling of the air-

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Fizika atmosfery

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cause of condensation and sublimation. Nuclei of condensation. Some data on the number of condensation nuclei. Freezing nuclei.

Ch. XV Clouds and Fogs

248-285

Phases of water in clouds. Microstructure of water and ice clouds. Classification of cloud types. Physical processes in cloud formation. Amount and height of clouds. Fogs. Mother of pearl clouds. Silver luminous (nocti-lucent) clouds (probable cause: temperature inversion at 80-85 km. altitude).

Ch. XVI Formation of Precipitation

286-302

The growth of drops by condensation. Coagulation* (pp.290-293). Coagulation caused by the difference in velocity of the falling droplets. Turbulent coagulation. Hydrodynamic and electrical forces. Probability of fusion of droplets. Over-condensation and isothermal condensation. A few considerations about the shape of growth of ice crystals. Artificial action on clouds and formation of precipitation.

Ch. XVII Precipitations

303-320

Rain and drizzle. Snow and frostgraupeln (soft hail). Hail. Precipitation formed on surfaces. Aircraft icing. Amount of precipitation on the globe.

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Fizika atmosfery

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321-334

Ch. XVIII Wind and Kinematics of Air Currents

Wind velocity. Turbulence in air currents * (pp. 322-325, with 3 graphs and 1 table). Its structure. Vertical distribution of the mean wind velocity. Its annual and daily variation. Lines of flow and trajectories of air particles.

Ch. XIX Forces acting in the Atmosphere and the Simpler Types of Atmospheric Motion

335-355

Gradient force and gravitation. Deflecting force of the earth's rotation. Geostrophic wind. Centrifugal force.

Force of inner friction. Turbulent friction. General equations of atmospheric motion. Ageostrophic wind deviation * (pp. 344-345 with 1 graph). Theory of the change in wind velocity with the height in the friction layer. Theoretical dependence of wind velocity on the height in the friction (ground) layer. Changes in wind with height as caused by horizontal gradients of temperature. Approximate solution of general equations of air motion in the form suggested by I. A. Kibel'.

Ch. XX Frounts and Cyclones

356-399

Air masses. Dry (scorching) wind (in USSR) * (pp. 359-361). Atmospheric fronts: origin, warm, cold, occluded. Origin of cyclones and anticyclones. Different forms of cyclonic

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Fizika atmosfery

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and anticyclonic circulation. Tropical cyclones. Anticyclones. Tropopause in cyclones and anticyclones. Sources of energy in the atmosphere and transformation of energy. Weather forecasting. Long-range forecasts.

Ch. XXI Local Winds

400-413

Mountain and valley winds. Other winds in mountain countries. Breezes.

Ch. XXII General Circulation

414-441

Temperature distribution in the atmosphere, as related to the general circulation. Circulation: in the tropical belt, in the moderate belt, over the polar regions, in the stratosphere. Theory of general circulation of the atmosphere. Monsoons.

Appendices

- | | |
|---|---------|
| I. Vapor pressure, saturating space above a plane surface (E) specific humidity (q), ratio of the mixture (m) and the virtual temperature (T_v) at temperatures from -50°C to $+50^{\circ}\text{C}$ | 441-443 |
| II. Radiation from a 1 cm^2 black surface into a half sphere | 444 |
| III. Meteorological symbols and schemes for plotting data on a synoptic chart and on baric surfaces of 850, 700, 500, 300 and 200 mb. | 445-451 |

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RESHETOV, V.D.; KHIGIAN, A.Kh., [redaktor]; BRAYNINA, M.I., [tekhnicheskiy
redaktor].

Inertia and sensitivity of the hair hygrometer in low temperature.
Trudy TSMO no.11:3-64 '53. (MLRA 8:5)
(Hygrometry)

KHRGIAN, A.Kh.; MAZIN, I.P.

Computing the errors of aerial droplet samplers. Trudy TSAO no.12:
3-12 '53. (MIREA 12:1)
(Meteorological instruments)

KHRGIAN, A. Kh.

A.V.Klossovskii, outstanding Russian geophysicist. Trudy
Inst. ist. est. i tekhn. no.1:193-218 '54. (MIRA 8:9)
(Klossovskii, Aleksandr Vikent'evich, 1846-1917)

KHRGIAN, A. KH.

USER/ Meteorology - Hail

Card 1/1 Pub. 86 - 27/36

Authors : Shmakov, V. N., and Khrgian, A. Kh., Prof.

Title : A rare case of hail

Periodical : Priroda 2, 116-117, Feb 1954

Abstract : Two rare case of hailing (July 5, 1953) with hailstones weighing from 15-75 g are reported. Drawings.

Institution :

Submitted :

Khrgian, A. Kh., Prof.
USSR/ Meteorology - Aeronautics

Card 1/1 : Pub. 86 - 13/36

Authors : Khrgian, A. Kh., Prof. at the Lomonosob University in Moscow

Title : Standing air waves

Periodical : Priroda 43/8, 88-92, Aug 1954

Abstract : The formation of standing waves on the lea side of mountain ranges is explained as well as their danger and advantage to aviation. Methods of calculating the dimensions of these waves and the speed of accompanying currents are given. Accompanying manifestations such as eddy currents are discussed. An analysis is made of the effect of standing waves on the climate, and the regions where these waves may be found. Illustrations; graphs; drawings.

Institution : ...

Submitted : ...

KHRGIAN, A. Kh.

KHROMOV, S.P.

"Physics of the atmosphere." A.Kh.Khrgian. Reviewed by S.P.Khromov.
Izv.Vses.geog.ob-va 86 no.3:308-310 My-Je '54. (MLRA 7:6)
(Khrgian, A.Kh.) (Meteorology)

KHARGIAN, A.Kh. ANIKHEYEV, A.S. redaktor; MULIN, Ye.V., tekhnicheskiy
redaktor.

[Mikhail Fedorovich Spasskii] Mikhail Fedorovich Spasskii.
Moskva, Izd-vo Moskovskogo univ., 1955. 50 p. (MLRA 8:?)
(Spasskii, Mikhail Fedorovich, 1809-1859)

Khrgian, A. N.

2

1-4E4A

Mitra, Sisir Kumar. *Verkhnaya atmosfera* (trans. by G. N. Rozenberg and E. A. Makarov from the original English, *Upper atmosphere*). Moscow, Izdat. Izdaniya i Literatury 1955. 638 p. 100 illus. Review by A. Kh. Khrgian in *Meteorologiya i radiofizika*, Leningrad, N. 10, 65-67, Oct. 1956. (For abstracts in original English, see 4-4-15, Aug. 1953, MAB.)

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KHRGIAN, A. KH.

AID P - 2508

Subject : USSR/Meteorology

Card 1/1 Pub. 71-a - 18/26

Author : Khrgian, A. Kh., Doc. Phys. and Math. Sci.

Title : I. I. Kasatkin and his work on storms and cumulus clouds

Periodical : Met. i Gidro., 3, 52-55, My-Je 1955

Abstract : The article reports on the life and studies of I. I. Kasatkin who died in 1941. His theory on the cumulus-nimbus with anvil type is presented with diagrams. A map illustrates the storm nucleus formation. Seven Russian references, 1905-1927 and 1 American, 1948.

Institution: None

Submitted : No date

AID P - 3864

Subject : USSR/Meteorology

Card 1/1 Pub. 71-a - 27/35

Author : Khrgian, A. Kh.

Title : M. A. Minkel'dey, M. M. Pomortsev - Pervyy Russkiy
Aerolog (M. M. Pomortsev - first Russian aerologist)
Gidrometeoizdat, 1954. (Book review)

Periodical : Met. i. gindr., 6, 58-59, N/D 1955

Abstract : The author reviews a biography of a Russian scientist
of the 19th century who investigated meteorology and
aeronautics. The book is strongly recommended for the
general public and for specialists in these fields.

Institution : None

Submitted : No date

NASILOV, Dmitriy Nikolayevich; KHRGIAN, A. Kh., professor, redaktor; SEMENOV, A. A., redaktor; RYDNIK, V. I., redaktor; TUMARKINA, N. A., tekhnicheskij redaktor

[Radiometeorology; radio methods in meteorology] Radiometeorologija; radiometody v meteorologii. Pod red. A. Kh. Khrgiana. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 215 p. (MIRA 9:12)
(Meteorology) (Atmospheric electricity)

KHRGIAN, A.Kh.; MAZIN, I.P.

Analyzing methods for describing spectra of cloud particle dispersion.
Trudy TSO no.17:36-46 '56. (MIRA 10:3)
(Clouds-Spectra)

KHREGIAN *Kh. B.*

GAYGROV, S.S., KHREGIAN, *A.*, redaktor; TARKHUNOVA, V.I., redaktor;
KRIGMAN, Yu.V., tekhnicheskij redaktor.

[Aerological observations on the drifting station "North Pole - 4" in 1955-56] Aerologicheskie nablyudenija na druzhivushchei
stantsi "Severnyi polius-4" v 1955-56 g. Moskva, Gidrometeor.
izd-vo (Otd-nie), 1957. 44 p. (Tsentral'naia aerologicheskia
observatorija. Trudy, no.18). *(MLR 10:8)*
(Atmosphere) (Arctic regions)

KKHRCIAN, A. Kh.

"Modern Conceptions on the Structure of Clouds," paper submitted
at International Assoc. of Meteorology Meetings, Toronto, Canada, 3-14 Sep 57

C-3,800, 327

KHORGIAN, A.Kh.; BOROVIKOV, A.M.; DZERDZEYEVSKIY, B.L.; DYUBYUK, A.F.;
ZVEREV, A.S.; ZOLOTAREV, M.A.; KRICHAK, O.G.; KLEMIN, I.A.;
PINUS, N.Z.; SLEZNEVA, Ye.S.; YASHGORODSKAYA, M.M., red.;
VLADIMIROV, O.G., tekhn.red.

[Cloud atlas] Atlas oblakov. Leningrad, Gidrometeor.izd-vo,
1957. 45 p. (MIRA 12:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeoro-
logicheskoy sluzhby.
(Clouds)

SHRGIAN, A. Kh., otvetsatvennyy redaktor; YASNOGORODSKAYA, M.M., redaktor;
VLADIMIROV, O.G., tekhnicheskiy redaktor

[Cloud atlas] Atlas oblakov. Leningrad, Gidrometeoizd-vo, 1957.
131 plates ----- [Explanatory text] Poisannitel'nyi tekst. 1957.
65 p. (MLRA 10:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby
(Clouds)

KHARGYAN, A.Kh.

Ionospheric observation station on Dickson Island. Mezhdunar. geofiz.
god no.3:93 '57. (MIRA 11:5)
(Dickson Island—Ionospheric research)

KHROIAN, A.Kh., professor.

The International Geophysical Year and the participation of the
U.S.S.R. universities in it. Vest.Mosk.un 12 no.1:192-195 '57.
(MLRA 10:8)

(International Geophysical Year, 1957-1958)

KHRIGIAN, A.Kh.

Macrocosm clouds. Vest. Mosk. un. Ser. mat. mekh. astron., fiz.,
khim. 12 no. 6:51-55 '57. (MIRA 11,10)

1. Kafedra fiziki atmosfery Moskovskogo gosudarstvennogo universiteta.
(Clouds)

KHRGIAN, R. K.

5/16

ATOMIC BOMBS AND WARFARE

7905

LARGE EXPLOSIVES AND CERMONIALIC PHEN. KENYA

15. Nov. 8, 1978, Mass. via ~~Kenya~~

A review is given of data on the effects of large atomic
and thermonuclear explosions on the civilian population
in Kenya.

Khrgian, A. Kh.

AUTHORS:

Khrgian, A.Kh., Britayev, A.S.

53-4-7/10

TITLE:

The International Geophysical Year (Mezhdunarodnyy geofizicheskiy god)

PERIODICAL:

Uspekhi Fiz. Nauk, Vol. 62, Nr 4, pp. 475-483 (USSR) 1957

ABSTRACT:

First, the author gives a short report on the past geophysical years. Next, the organization of the present geophysical year is described. The object of the scientific investigations of the international geophysical year is the solution of those most important planetary problems of geophysics which demand simultaneous observations on the entire universe. The program of the works during the international geophysical year include the most important branches of modern geophysics: meteorology, terrestrial magnetism, polar phenomena and luminescence of the sky at night, ionosphere, solar activity, cosmic radiation, determination of longitudes and latitudes, glaciology, oceanography, seismology and gravitation. The various investigations are, however, combined by the leading ideas to a whole. Increased observations shall take place during the so-called "regular world days" (full moon, solar eclipse, increased falling of meteors, etc.). An important place is occupied during the international geophysical year by the investigation of the circulation of the atmosphere;

Card 1/2

The International Geophysical Year.

53-4-7/10

special attention is devoted to the antarctic. The exact determination of time and longitudes by means of astronomical methods is connected with the problem of the entire circulation of the atmosphere. Rotation of the earth becomes slower within the course of centuries, and, besides there exist fairly regular annual fluctuations of the duration of the day. Whilst the angular momentum of the earth remains constant, either the moment of inertia or the relative velocity of the rotation of the atmosphere changes. Here the actual velocities of wind on the entire earth have to be taken into account. The longitudinal determinations of various observatories have to solve the problem of the motion of the continents. A further complex of problems is connected with solar radiation received by the earth. With this also the reflection of solar radiation by the earth is connected. The investigation of the spectra of the polar phenomena, luminescence of the night sky and the corona are of great importance. Further fields of research are mentioned.

AVAILABLE: Library of Congress

Card 2/2

3(7)

PHASE I BOOK EXPLOITATION

SOV/1374

Khrgian, Aleksandr Khristoforovich

Fizika atmosfery (Physics of the Atmosphere) 2d ed., rev. Moscow,
Fizmatgiz, 1958. 475 p. 5,000 copies printed.

Ed.: Dubnik, R.L.; Tech. Ed.: Akhiamov, S.N.

PURPOSE: This book is intended for geophysicists and students of atmospheric physics at the university level.

COVERAGE: This volume defines the subject matter of atmospheric physics, describes the constituents of the atmosphere and the physical processes occurring in it. Following a brief historical outline, particularly of the work done in pre-revolutionary Russia and Soviet Union, the author discusses, among other factors, atmospheric dynamics, the methods and tools for carrying out observations, and the application of high-speed computing machines. Recent developments in the Soviet Union and the contributions of leading scientists to this field are also discussed. The author expresses his thanks to V.A. Bugayev, V.A. Dzhordzhio and S.P. Khromov for their assistance in the preparation of the book. There are 218 diagrams

Card 1/13.2

Physics of the Atmosphere

SOV/1374

and 19 references, of which 11 are Soviet, 5 English, 2 German, and 1 Indian (in Russian translation).

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Khrgian, A.Kh.

Comments on E.K. Fedorov's article ("Priroda", no. 9, 1957).
Meghdunar.geofiz.god no.4:117 '58. (MIRA 11:11)
(Atmosphere, Upper--Rocket observations) (Artifical satellites)

MRGIAN, A.Kh.

Comments on the article of N.G. Shvidkovskii and others. ("Meteoroologiya i gidrologiya", no.8, 1957). Mezhdunar.geofiz.god no.4:118 '58.
(MIRA 11:11)

(Atmosphere, Upper-Rocket observations)

KHRGIAN, A.Kh.

Problems of utilizing the materials of the International Geophysical
Year. Meshdunar. geofiz. god no.5:15-22 '58. (MIRA 11:10)
(International Geophysical Year, 1957-1958)

SOV/169-59-6-6238

Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 6, p 121 (USSR)

AUTHORS: Borovikov, A.M., Grudzinskiy, M.E., Khrgian, A.Kh.TITLE: On the Meteorological Conditions of the Alpine Tien ShanPERIODICAL: Tr. Tsentr. aerol. observ., 1958, Nr 21, pp 176 - 199

ABSTRACT: The authors give data on the mean air temperature in summer of 1956 in the area of the upper part of the Inylchek glacier, on the diurnal course of temperature, humidity, and pressure, on wind conditions, on the recurrence of the various forms of cloudiness and on precipitations of various duration. The synoptic processes and the character of weather during the expedition are briefly described. The observations in the southern Inylchek reveal the considerable cooling caused by the glaciers: A temperature decrease by 3°C is observed in the lower layer of the air near the glacier instead of a temperature increase by 3 - 4°C in comparison to the free atmosphere, typical for the rocky mountain ranges of the Tien Shan. It was found that the synoptic conditions of the mountainous

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SOV/169-59-6-6238

On the Meteorological Conditions of the Alpine Tien Shan

country are also out of the ordinary. The approach of a cold front is accompanied by increased cloudiness, precipitations, intensification of the wind, etc, a great distance ahead of the front line. The cloud system of the cold front in mountains turns often into a wide system of stratified rainy clouds. Bibl. 8 titles.

N.I. Zverev

Card 2/2

KHrgian, A. Kh.

Vertical motion of atmosphere and winds over mountain countries.
Trudy TSAO no. 24: 12-15 '58. (MIRA 12:1)
(Caucasus-Winds)

KUKARKIN, Boris Vasil'yevich, prof.; RYBNIKOV, Konstantin Alekseyevich, prof.; BASHMAKOVA, Izabella Grigor'yevna; YUSHKEVICH, Adol'f Pavlovich; YANOVSAYA, Sof'ya Aleksandrovna; SPASSKIY, Boris Ivanovich, dotsent; MIKHAYLOV, Glab Konstantinovich, starshiy nauchnyy sotrudnik; MATYNOV, D.Ya., prof., ctv.red.; GORDEYEV, D.I., prof., red.; IVANENKO, D.D., prof., red.; KUDRYAVTSEV, P.S., prof., red.; KULIKOVSKIY, P.G., dotsent, red.; KHRGIAN, A.Kh., prof., red.; SHEVTSOV, N.S., prof., red.; VERKHUNOV, V.M., assistant, red.; KONONKOV, A.P., red.; YERMAKOV, M.S., tekhn.red.

[Programs of courses on the history of the physicomathematical sciences] Programmy po istorii fiziko-matematicheskikh nauk. Moskva, 1959. 40 p. (MIRA 12:12)

1. Moscow. Universitet. 2. Orgkomitet Vsesoyuznoy mezhvuzovskoy konferentsii po istorii fiziko-matematicheskikh nauk (for Kukarkin, Rybnikov, Spasskiy, Gordeyev, Ivanenko, Kudryavtsev, Kulikovskiy, Mikhaylov, Khrgian, Shevtsov, Verkhunov, Kononkov).

(Physics--Study and teaching)

(Mathematics--Study and teaching)

GAYGEROV, S.S.; KHRGIAN, A.Kh., red.; BLINNIKOV, L.V., red.; KRIGMAN,
YuV., tel. [redacted].

[Some data on aerological investigations of the atmosphere over the
Antarctic] Nekotorye dannye aerologicheskogo issledovaniia atmosfery
Antarktidy. Moskva, Gidrometeorizdat (otd-nie). 1959. 85 p. (TSentral'-
naia aerologicheskaiia observatoriia. Trudy, no.27). (MIRA 12:4)
(Antarctic regions--Meteorological research)

KH R-17-1000

PHASE I BOOK EXPLOITATION SOV/5543

Moscow. Tsentral'nyy institut prognozov

Voprosy diagnoza i prognoza nizkoy oblachnosti i obledeneniya samolétov (Problems in the Diagnosis and Forecasting of Low Cloud Formations and Icing On Aircraft) Moscow, Gidrometeoizdat (Otd-nyye), 1959. 92 p. (Series: Its: Trudy, vyp. 80) Errata slip inserted. 800 copies printed.

Sponsoring Agencies: Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR; Tsentral'nyy institut prognozov.

Ed. (Title page): N. V. Petrenko; Ed. (Inside book): M. I. Sorokina; Tech. Ed.: I. M. Zarkh.

PURPOSE: This publication is intended for synoptic meteorologists at aviation meteorological stations and other weather-service organizations. It may also be of interest to theoretical research workers in meteorology.

COVERAGE: The first four articles of this issue of the Transactions of the Central Institute of Weather Forecasting deal with conditions

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Problems in the Diagnosis (Cont.)

SOV/5543.

associated with the formation and forecasting of cloudiness in the low cloud level. The results obtained from balloon and aircraft soundings are presented. The conditions of aircraft icing in clouds are analyzed in two articles and the possibilities of forecasting the relative humidity are evaluated. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

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Gogoleva, Ye. I. Changes in Dew-Point Deficit Before the Appearance and Dispersion of Cloudiness Below Altitudes of 600 m	42
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Problems in the Diagnosis (Cont.)

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Pchelko, I. G., and A. M. Borovikov. Results of Processing Data
of Microstructure Observations for Clouds With and Without
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Dobryashman, Re. M. On Methodology for the Forecasting of the
Relative Humidity at Positive Temperatures

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AVAILABLE: Library of Congress

Card 3/3

JA/dwm/jw
9-6-61

KHRGIAN, Aleksandr Khristoforovich; POGOSSYAN, Kh.P., otd.red.;
VILSOVA, Yu.V., red.; VLADIMIROV, O.G., tekhn.red.

[An outline of the development of meteorology] Ocherki
razvitiia meteorologii. Izd.2., perer. Leningrad,
Gidrometeor.izd-vo. Vol.1. 1959. 427 p. (MIRA 12:8)
(Meteorology)

KHORGIAN, A.Kh.

Cloud investigation at the Central Aerological Observatory.
Trudy TSAO no.26:17-21 '59. (MIRA 12:5)
(Cloud physics)

KHURGIAN, A. Kh.

Fifth Assembly of the Special Committee of the International Geo-
physical Year and current problems in geophysics. Usp.fiz.nauk 67
no.2:363-366 F '59. (MIRA 12:4)
(Geophysics--Congresses)

RYBNIKOV, K.A., prof., red.; SPASSKIY, B.I., dotsent, red.; GORDEYEV, D.I., prof., red.; IVANENKO, D.D., prof., red.; KUDRYAVTSEV, P.S., prof., red.; KUKARKIN, B.V., prof., red.; KULIKOVSKIY, P.G., dotsent, red.; MIKHAYLOV, G.K., starshiy nauchnyy sotrudnik, red.; KHARGIAN, A.Kh., prof., red.; SHEVTSOV, N.S., prof., red.; VERKHUNOV, V.M., assistant, red.; KONOMKOV, A.P., red.; MALIKOVA, M.A., red.; SOROKINA, L.A., red.; YEMAKOV, M.S., tekhn.red.

[Summaries of papers and reports of the Interuniversity Conference on the History of Physics and Mathematics] Tezisy dokladov i soobshchenii Mezhdunarodnoi konferentsii po istorii fiziko-matematicheskikh nauk. Moskva, Izd-vo Mosk.univ., 1960. 187 p. (MIREA 13:6)

1. Mezhdunarodnaya konferentsiya po istorii fiziko-matematicheskikh nauk. 1960.
(Mathematics--Congresses) (Physics--Congresses)

GORDEYEV, D.I., prof., glav. red.; DVORYANKIN, F.A., prof., red.; KONONKOV, A.F., red.; RYBNIKOV, K.A., prof., red.; SOLOV'IEV, A.I., dotsent, red.; SPASSKIY, B.I., dotsent, red.; FIGUROVSKIY, N.A., prof., red.; SHEVTSOV, N.S., prof., red.; KHORGIAN, A.Kh., prof., red.; ZAYTSEVA, M.G., red.; YERMAKOV, M.S., tekhn. red.

[History and methodology of the natural sciences] Istoryia i metodologiya estestvennykh nauk. Moskva. No.1. [Physics] Fizika. 1960. 221 p. (MIRA 14:5)

1. Moscow. Universitet.
(Physics)

KHRGIAN, A.Kh.

Atmospheric phenomena as described in Russian chronicles. Ist.i
metod.est.nauk no.1:141-146 '60. (MIRA 14:10)
(Russia--Chronology, Historical) (Atmosphere)

KHRCIAN, A.Kh.

Records on weather and climate in ancient Indian literature. Iz ist.
nauki i tekhn. v stran. Vost. no.1:330-336 '60. (MIRA 14:8)
(India--Meteorology)

AUTHOR: Khrgian, A. Kh. 8/050/60/000/03/016/020
TITLE: On the Soviet "Cloud Atlas" and B007/B002
Classification of Cloud Forms
PERIODICAL: Meteorologiya i hidrologiya, 1960, Nr 3, pp 53 - 56 (USSR)
ABSTRACT: The Soviet Cloud Atlas was published in 1957. Since its classification differs from that given by the International Cloud Atlas, Professor S. P. Khromov put a number of fundamental questions. Here, the development of the Soviet Cloud Atlas is given in brief. It had already been set up in 1955, and when the International Cloud Atlas was published in 1956, the total edition of the Soviet Cloud Atlas had already been printed. The contents of the International Cloud Atlas are given in brief, and next, the principles of cloud classification given by the Soviet atlas, are described. Finally, the Soviet Cloud Atlas is said to correspond to the present knowledge on clouds, and for 2 years has been successfully used by all hydrometeorological stations of the USSR. The atlas is set up on the basis of pictures taken in the USSR. Although it has a number of shortcomings, these may be eliminated in the new edition. In their basic features, the classifications of the Soviet and the International Cloud Atlas are almost the same. The question as to the difference between
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On the Soviet "Cloud Atlas" and Classification of
Cloud Forms

S/050/60/000/03/016/020
B007/B002

the two, has to be examined from two points of view. First, in what way the conformity of cloud data, the international exchange of which takes place in the form of synoptic telegrams, is maintained. This problem seems to be solved as far as corresponding indications for the composition of synoptic telegrams (as a supplement to the atlas) are available. Secondly, it must be found out in what way advantages and shortcomings due to different classifications, have an influence on the elaboration of scientific problems of cloud development. This problem requires a still more detailed investigation. However, the difficulty of a statistic interpretation of the indications given by the International Cloud Atlas must be pointed out, since this atlas allows different combinations of technical terms in the description of clouds. ✓

Card 2/2

ABRAMOVICH, K.G.; KHRGIAN, A.Kh.

Studying the conditions of the formation of lower level stratus
clouds. Trudy TSAO no.28:3-48 '60. (MIRA 13:3)
(Cloud physics)

KHORGIAN, A.Kh.

International Cloud Year, 1896-1897, and its contribution
to the study of clouds. Trudy TSAO no.35:36-55 '60.(MIRA 13:11)
(Cloud physics--Research)

KHRGIAN, A.Kh.

Cloud photography and simultaneous photography of the entire day.
Trudy TSAO no.35:62-65 '60. (MIRA 13:11)
(Photography of clouds)

KHRGIAN, A. Kh., otv. red.; YASNOCGORODSKAYA, M.M., red.; VLADIMIROV, O.G.,
tekhn. red.

[Changes and additions to the "Cloud atlas" published in 1957] Izme-
neniya i dopolneniya k "Atlasu oblakov," izd. 1957 g. Leningrad, Gidro-
meteor. izd-vo, 1961. 3 p., illus. (MIRA 14:12)

1. Russia (1923- U.S.S.R.) Glavnaya upravleniya gidrometeorologiches-
koy sluzhby.

(Clouds)

BOROVIKOV, A.M., kand. fiz.-mat. nauk; KHRGIAN, A.Kh., prof.; SOBOLEV, L.G.,
ctv. red.; YASNODGORODSKAYA, M.M., red.; VLADIMIROV, O.G., tekhn.
red.

[Abridged cloud atlas for hydrometeorological observations on
ships] Sokrashchennyi atlas oblakov dlia sudovykh gidrometeoro-
logicheskikh nablyudenii. Pod red. L.G. Soboleva. Leningrad,
Gidrometeor. izd-vo, 1961. 52 p. (MIRA 15:2)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorolo-
gicheskoy sluzhby.

(Clouds)

KHRGIAN, A.Kh., prof., red.; KUZNETSOV, G.I., red.; GEORGIYEVA, G.I.,
tekhn. red.

[Atmospheric ozone; results of the work of the International
Geophysical Year in the U.S.S.R. Reports and resolutions] At-
mosfernyi ozon; rezul'taty rabot Mezhdunarodnogo geofiziche-
skogo goda v SSSR. Doklady i rezoliutsii. Moskva, Izd-vo
Mosk. univ., 1961. 195 p. (MIRA 15:4)

1. Konferentsiya po atmosfernomu ozonu, Moscow, 1959.
(Ozone) (Atmosphere)

KHRGIAN, A. Khr.

3

PHASE I BOOK EXPLOITATION SOV/5852

Borovikov, Aleksandr Moiseyevich, Ivan Ivanovich Gayvoronskiy, Yelizaveta Germanovna Zak, Vadim Vladimirovich Kostarev, Il'ya Pavlovich Mazin, Vladislav Yevgen'yevich Minervin, Aleksandr Khristoforovich Khrgian, and Solomon Moiseyevich Shmeter

Fizika oblakov (Cloud Physics) Leningrad, Gidrometeoizdat, 1961. 458 p.
5000 copies printed.

Ed. (Title page): A. Kh. Khrgian; Ed. : V. S. Protopopov; Tech. Ed. :
M. I. Braynina and O. G. Vladimirov.

PURPOSE: This book is intended for meteorologists and for specialists in forecasting service and aviation.

COVERAGE: The book describes modern methods of studying the development, structure and origin of clouds. Special attention has been given to the forma-

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Cloud Physics

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tion of microscopic elements in clouds. The macroscopic properties of clouds are also studied in detail. Their position in space, motion, as well as their connection with thermodynamic structure of the atmosphere, general circulation, cyclonic activity, etc. are investigated. Flying in clouds is briefly discussed. One chapter deals with cloud modification and seeding. The book is based on Soviet and non-Soviet sources. Ch. I was written by Ye. G. Zak and I. P. Mazin; Ch. II, by A. M. Borovikov, V. Ye. Minervin, A. Kh. Khrgian and S. M. Shmpter; Ch. III, V, and VI, by A. Kh. Khrgian; Ch. IV, by A. Kh. Khrgian and S. M. Shmpter; Ch. VII, by Ye. G. Zak; Ch. VIII, by A. M. Borovikov; Ch. IX, by J. P. Mazin; Ch. X, by I. I. Gayvoronskiy; Ch. XI, by V. V. Kostarev, V. Ye. Minervin and A. Kh. Khrgian. The authors thank L. T. Matveyev and A. M. Baranov. There are 632 references: 274 English; 254 Soviet, 71 German, 30 French, 2 Hungarian and 1 Polish.

Card 2/12

S/169/63/000/002/009/127
D263/D307

AUTHOR: Khrigian, A. *KH.*

TITLE: Contemporary problems of the study of atmospheric ozone

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 13, abstract 2B102 (In collection: Atmosfern. ozon, M., Mosk. un-t, 1961, 3-5)

TEXT: Achievements in the study of atmospheric ozone were noted during a conference devoted to atmospheric ozone, held in Moscow in October 1959. A large amount of material was collected and systematized during 1957-1959. Papers read during the conference showed that, as a result of observations of ozonometric stations of the USSR and of foreign observations, valuable information has been obtained regarding the geographic distribution of ozone, ozone transport and other problems. *[Abstracter's note: Complete translation.]*

Card 1/1

S/169/63/000/002/024/127
D263/D307

AUTHORS: Khrgian, A. Kh. and Kuznetsov, G. I.

TITLE: On the daily variation of atmospheric ozone

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 16, abstract 2B119 (In collection: Atmosfern. ozon, M., Mosk. un-t, 1961, 184-186 (summary in Eng.))

TEXT: The magnitude of the daily variation of ozone was determined from a consideration of daily ozone measurements taken during the IGY. It was found that the amount of ozone undergoes considerable non-periodic changes from day to day, although a systematic daily variation may be found by calculating the mean values of the overall ozone contents for individual hours. It was thus shown that at Vignia-di-Valle (Italy) during July-August the amount of ozone increased by 0.005 cm from 9 to 16 hrs and during September-November it increased by 0.006 cm from 10 to 16 hrs; in Elmasse (Sardinia) during July-September the overall ozone content increased by 0.011 cm between 9 and 16 hrs, and during October-December it rose by

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On the daily variation ...

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D263/D307

0.016 cm between 8 and 16 hrs. The observed values of the daily accumulation of ozone are considerably higher than those calculated from the theory of photochemical equilibrium. It was also found that during the late evening and early morning hours the overall ozone contents were increased in comparison with the near-noon period. [Abstracter's note: Complete translation.]

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3055
S/035/62/000/003/032/053
A001/A101

3.5150

AUTHOR: Khrgian, A. Kh.

TITLE: On the theory of lateral refraction

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 3, 1962, 20,
abstract 3G162 ("Izv. vyssh. uchebn. zavedeniy. Geod. i aerofoto-
s"yemka", 1961, no. 3, 17-22)

TEXT: The author considers the phenomenon of lateral refraction. He proves the necessity of taking into account the inclination of air surfaces of equal refractive index (equal density) to the horizon. It is shown that the magnitude of inclination angle of equal density surfaces may vary strongly depending on conditions. Thus, e.g., the inclination of surfaces due to horizontal gradient of temperature and air pressure within voluminous air masses may amount to 40", and the inclination in the frontal zone between voluminous air masses - 15 - 20"; the angle which is observed by day over heated mountain slopes and by night over cooled slopes amounts sometimes to a few degrees, and near vertical cliffs (or walls) to several tens of degrees. A formula is derived for calculating the curvature radius of ray projection onto horizontal plane. Using the

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A001/A101

On the theory of lateral refraction

data published in the works by G. Foerster ("Veroeff. d. Preuss. geodaet. Inst.", 1929, 101) and B. N. Rabinovich ("Trudy TsNIIGAiK", 1949, no. 6) the author compares the values of curvature radius calculated from the average meteorological data for many years and those obtained from geodetic measurements. Divergences in the curvature radius values (calculated values are 2 to 3 times less than those from geodetic measurements) are explained, in the author's opinion, by the fact that actual meteorological conditions during the period of observations at triangulation points differed from their average values for many years. Several examples of existence of local refraction fields are cited, in which the curvature radius of refraction curve differs strongly from the calculated one. There are 7 references.

F. Noskov

[Abstracter's note: Complete translation]

Card 2/2

KHRGIAN, A.Kh.

Conference on atmospheric ozone. Mezhdunar. geofiz. god no.9:48-49
'61. (MIRA 14:3)
(Ozone--Congresses) (Atmosphere)

LOGVINOV, K.T.; KHRGIAN, A.Kh.

Third session of the Commission of Aerology of the World
Meteorological Organization. Meteor. i gidrol. no.2:69-71
P '62. (MIRA 15:2)

(Meteorology—Congresses)

KHRGIAN, A.Kh.

All-Union Cloud Year. Meteor. i gidrol. no.6:10-14 Je '62.
(Clouds) (MIRA 15:6)

S/003/62/000/006/001/001
B117/B110

AUTHORS: Khrgian, A. Kh., Professor, Doctor of Geographical Sciences, Shvidkovskiy, Ye. G., Professor, Doctor of Physics and Mathematics

TITLE: Soviet scientists attending the Assembly of Geophysicists

PERIODICAL: Vestnik vysshey shkoly, no. 6, 1962, 71-72

TEXT: The tasks and activities of the International Union of Geodesy and Geophysics and the participation of Soviet scientists in its work are briefly reported, especially their contributions to the Helsinki assembly at the summer 1960 which was attended by 1740 delegates from 60 countries. At the meetings of the Association for Meteorology and Physics of the Atmosphere, A. M. Obukhov (USSR) reported on the choice of a baroclinic model of the atmosphere best suited for predictions, and S. V. Nemchinov on the solution of the system of equations for forecasting. The only report dealing with the clouds in the troposphere was that by N. Sh. Bibilashvili (USSR) on the physics and dynamics of convective clouds.

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Soviet scientists...

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The problem of atmospheric ozone formed an important item in the working program of the assembly. This was studied by the International Commission of Atmospheric Ozone on which A. Kh. Khrgian (MGU) served as delegate from the USSR. In the Symposium on the Geophysical Aspect of Cosmic Rays 17 reports were presented, including that by D. D. Krasil'nikov (Yakutskiy filial AN SSSR (Yakut Branch AS USSR) on temporary and latitudinal variations of cosmic rays, their anisotropy and relation to the cosmic activity of the sun, and the interplanetary magnetic field. In the Symposium on Chemical Processes and Radioactivity of the Atmosphere, Ye. S. Selezneva of the Glavnaya geofizicheskaya observatoriya (Main Geophysical Observatory) reported on the results of the chemical analysis of precipitations in the USSR. Her report was based on information from 13 USSR observatories set up specially for the International Geophysical Year. Soviet scientists made considerable contributions to the investigation of northern lights and related phenomena. The observations they had collected were used in reports by Western scientists. The next assembly is planned for 1963. Its main tasks will be an evaluation of the material collected during the past International Geophysical Year and preparations for the International

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Soviet scientists...

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B117/B110

Year of the Calm sun. The USSR is expected to take part actively in the 1963 assembly.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

Card 3/3

S/169/62/000/011/020/077
D228/D307

AUTHORS: Khrgian, A.Kh. and Kuznetsov, G.I.

TITLE: The meridional circulation of the atmosphere and the global transfer of atmospheric ozone

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 19-20, abstract 118132 (Geofiz. byul., Mezhdunarod. geofiz. kom-t pri Prezidiume AN SSSR, no. 11, 1962, 3-11)

TEXT: The relation between circulation at the 500-mb level and the total ozone content is examined. It is noted that the nature of the fluctuations in the variability of ozone (difference between the maximum and minimum mean-daily value for each month) and the index of meridional circulation are close to each other. The authors reckon that there is a quite definite relation between the total ozone content x and the meridional circulation index Γ_{1-2} . Thus, the correlation factor r in March 1958 between x for Vinia-di-Valle (Italy) and Γ_{1-2} is 0.55; in July 1957 $r = 0.20$. For the station Bismarck (USA) in April 1958, $r = 0.41$. The average total ozone con-
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The meridional circulation ...

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D228/U307

tent for 11 months (July 1957-May 1958) was calculated for Vinia-di-Valle, at different states of circulation (meridional and zonal). When the state of circulation at Vinia-di-Valle is meridional, $x = 0.348$ cm; for zonal circulation $x = 0.339$ cm, i.e. 2.6% more. The authors point to close relation between the total ozone content and the circulation type, characterized by the disposition of high-altitude ridges and troughs over West Europe and the Union's European territory. The nature of this relation, however, sometimes changes into an inverse one, on the transition from the cold to the warm season.

Abstracter's note: Complete translation

Card 2/2

S/169/62/000/011/016/077
D228/D307

AUTHOR: Khrgian, A.Kh.

TITLE: All-Union scientific conference on meteorology

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 1,
abstract 11B4 (Geofiz. byul., Mezhdunar. geofiz.
kom-t pri Prezidiume AN SSSR, no. 11, 1962, 68-69)

TEXT: Information is given about the work of the All-Union meteorologic conference, which was held in Leningrad from June 21-29, 1961, and was devoted to the 40th anniversary of V.I. Lenin's signing of the decree on the organization of the hydrometeorologic service of the USSR. Light is briefly thrown upon papers that the conference sections heard on dynamic and synoptic meteorology, climatology, the physics of the free atmosphere, actinometry and atmospheric optics, agrometeorology, the physics of the near-ground layer, instruments, and observational methods.

Abstracter's note: Complete translation ✓

Card 1/1

KHARGIAN, A.Kh.

Session of the International Commission on Aerology. Geofiz.biul.
no.12:27-28 '62. (MIRA 16:5)
(Meteorology--Congresses)

KHRCIAN, A.Kh.

Climatic oscillations of the earth. Geofis.biul. no.12:29-38
'62. (MIRA 16:5)
(Climatology—Congresses)

KERGHIAN, A. Es.

Wilhelm Bjerknes; on his 100th birthday. Meteor. i gildrol. no.12;
46-48 D '62. (MIRA 15:12)
(Bjerknes, Wilhelm, 1862-1951)

KHRGIAN, A.Kh.

Cirrus forms. Trudy TSO no.39:39-44 '62.
(Clouds)

(MIRA 15:6)

BERKOVÁ, N.M.; SIMONOV, Ye.D., red.; GIPPENREYTER, Ye.B., red.;
KIZEL', V.A., red.; KUZ'MIN, K.K., red.; LETAVET, A.A., red.;
POLYAKOV, A.I., red.; ROTOTAYEV, P.S., red.; FILIMONOV, L.N.,
red.; KHORGIAN, A.Kh., red.; YUKHIN, I.V., red.; KONOVALYUK,
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AUTHOR: Khrgian, A. Kh.

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ABSTRACT: A review of sixty Soviet and West articles on the status of knowledge of the physics of stratiform clouds has revealed that the theory of development of such clouds has been studied in considerable detail with respect to their dynamics and radiant and turbulent heat exchange. Calculation of a large number of numerical examples is necessary, however, to reveal more clearly the importance of individual factors in formation of cloud layers. Such further development requires the introduction into such computations of various values of the turbulent coefficient, vertical velocity, humidity and temperature for the layers above and below clouds. It may be necessary to take into account the existence of maximum tur-

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bulence in the lower part of the boundary layer and its attenuation upward in the direction of the boundary of the inversion. Numerical conclusions from the theory probably can give a sound basis for organization of detailed aerological observations, and as observational data is accumulated, for forecasting of clouds and precipitation. Further progress now requires more extensive geographical investigations of the heights, thickness, frequency of occurrence, and other characteristics of stratiform clouds, employing a uniform method. These investigations should be made in all climatic zones and under a wide range of geographic conditions. These investigations will make it possible to evaluate independently the influence of the temperature and humidity of the forming and above-lying layers and the influence of the underlying surface and other factors. Since theory shows that the form of the upper surface of cloud layers is associated with their instability it would be valuable to have statistical data on this point from different climatic zones. Simultaneous observation of forms and temperature and wind fluctuations will make it possible to clarify the relationship between regular convection and turbulence in the upper part of the cloud and whether in that part of the cloud there is exchange with the air above the cloud. Orig. art. has: 5 formulas, 6 figures and 13 tables.

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